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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,803	06/07/2001	Larry Scott Crump	CCP-3358(1)	5347

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EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 08/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/681,803

Applicant(s)

CRUMP ET AL.

Examiner

Justin R Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 20-26 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 27-32, 34 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19, 27-32, 34, and 35, drawn to a method of applying and curing a gel coat, classified in class 427, subclass 457.
 - II. Claims 20-26 and 33 are drawn to a gel coat, classified in class 428, subclass 411.1.
2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can be made by another and materially different process, such as one in which no mold is present or one in which the gel coat is at least partially cured via heating in an oven as opposed to being exposed to actinic radiation.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Gary Plotecher on August 11, 2003 a provisional election was made with traverse to prosecute the invention of a method of applying and curing a gel coat, claims 1-19, 27-32, 34, and 35. Affirmation of this

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election must be made by applicant in replying to this Office action. Claims 20-26 and 33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 27, 32, 34, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Gupta (US 5,702,819). Gupta discloses a method of manufacturing lenses comprising the steps of applying an uncured gel coat or resin 16 to a nonporous mold and exposing the first and second surfaces of said resin to actinic radiation to cure said resin, preferably in the form of ultraviolet radiation (Figure 1 and Column 6, Lines 21-30). Gupta describes a preferred embodiment in which the mold is formed of a uv-transparent transmitting material, such as crown glass, so that ultraviolet light is provided through multiple surfaces (lens perform provides transparent surface as well).

Regarding claim 32, Gupta suggests resin compositions containing acrylate resins (Column 3, Lines 55-60).

With respect to claims 34 and 35, Gupta suggests that a combination of heat and ultraviolet light can be used to cure the resin material (Column 6, Lines 49-50).

7. Claims 27, 28 and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Cordts (US 4,295,907). As depicted in Figure 1, Cordts teaches a

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process for making glass fiber reinforced laminates comprising the steps of applying an uncured gel coat 20 to a nonporous mold or plastic film 17 and exposing the first surface of the gel coat (that which contacts the mold) to actinic radiation from a source located such that the actinic radiation must pass through the nonporous mold to affect at least a partial cure of said gel coat. In this instance, ultraviolet lamps 13 are depicted as being positioned beneath the gel coat resin 20.

Regarding claim 32, the uv-curable gel coat resin of Cordts can be one of several resins and is typically formed of acrylate resins (Column 1, Lines 60-65).

Claim Rejections - 35 USC § 102 / 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 4, 5, and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cordts. As depicted in Figure 1, Cordts teaches a process for making glass fiber reinforced laminates comprising the steps of applying an uncured gel coat 20 to a nonporous mold or plastic film 17, exposing the first surface of the gel coat (that which contacts the mold) to actinic radiation, and exposing the second surface of the gel coat (that which is exposed to the environment) to actinic radiation. In describing the radiation treatment, Cordts suggests that ultraviolet radiation sources can be provided above and below the gel coat to affect

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at least a partial cure (Column 5, Lines 56-62). While Cordts describes the use of ultraviolet sources above and below the gel coat in Figure 4, a fair reading of Cordts suggests that this arrangement is equally applicable to the embodiment depicted in Figure 1, especially since Cordts states that "one or more sources of ultraviolet radiation" can be included in Figure 1 (Column 2, Lines 40-45), and as such, one of ordinary skill in the art at the time of the invention would have found it obvious to include ultraviolet sources above and below the gel coat in the embodiment depicted by Figure 1.

Regarding claim 2, in an analogous manner to the claimed invention, the mold of Cordts is a transparent casting film. It is noted that the "casting plastic films" described and depicted by the claimed invention are analogous to those described and depicted by Cordts. In particular, the language "casting plastic film" does not require an embossed pattern or cavity in the carrier film. If applicant intends the language to require such a construction, one of ordinary skill in the art at the time of the invention would have found it obvious to impart a pattern or cavity to the carrier film of Cordts to result in a desired shape or object (versus being applied to smooth carrier film).

With respect to claims 4 and 5, the process of Cordts includes the use of ultraviolet radiation (Column 2, Lines 40-45).

Regarding claim 8, Cordts suggests that typical gel coats include acrylates (Column 1, Lines 63-67).

Claim Rejections - 35 USC § 103

10. Claims 3 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cordts as applied in Paragraph 9 above and further in view of Borrel (US 3,655,483).

As previously set forth, Cordts discloses a process of applying a gel coat to a casting plastic film, wherein said gel coat is exposed to ultraviolet radiation to at least partially cure said gel coat. In describing the casting film, Cordts requires that the film is a transparent carrier film and suggests that cellophane is one possible material. While Cordts fails to expressly describe the use of a polyester material, one of ordinary skill in the art at the time of the invention would have found it obvious to use such a material in the process of Cordts since polyester materials are well recognized as being suitable carrier films and providing a transparent surface for the exposure to ultraviolet radiation. For example, Borrel describes a similar process in which the carrier film or substrate-support is formed of either regenerated cellulose or terephthalic polyester (Column 2, Lines 56-58). In the specific examples (Columns 3 and 4) of Borrel, Mylar (terephthalic polyester) is used as the carrier film in an analogous manner to that of the claimed invention.

11. Claims 6, 7, 9-15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cordts as applied in the Paragraph 9 above and further in view of Russell (US 4,338,269). As previously set forth, Cordts discloses a process of applying a gel coat to a casting plastic film, wherein said gel coat is exposed to ultraviolet radiation to at least partially cure said gel coat. In describing the ultraviolet radiation source, Cordts suggests the use of ultraviolet lamps (Column 5, Lines 20-25). While

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Cordts fails to expressly suggest the use of mercury lamps, this source of ultraviolet radiation is extremely well known and extensively used when uv-curable formulations are included in a given laminate, as shown for example by Russell (Column 5, Lines 17-21). In particular, Russell states that mercury vapor lamps are the preferred source of ultraviolet radiation. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to include mercury lamps as the ultraviolet radiation sources in the process of Cordts.

Regarding claim 7, as previously stated, Cordts suggests the use of ultraviolet radiation sources above and below the gel coat.

With respect to claim 9, Cordts suggests that typical gel coats include acrylates (Column 1, Lines 63-67).

Regarding claim 10, the process of Cordts further comprises the application of a reinforcing lamination (layer 34: combination of fibers 25 and resin from tank 27).

With respect to claim 11, Cordts suggests that the gel coat can be formed of any of the addition polymerizable resinous compositions, including unsaturated polyester resin syrups (Column 4, Lines 56-60). In describing the resin of the reinforcing lamination, Cordts describes the use of unsaturated polyester syrup. Thus, the reference recognizes the use of the same resin in the gel coat and the reinforcing lamination (would be dependent on the specific product being manufactured).

Regarding claim 12, the second surface of the reinforcing lamination (that which is exposed to the environment) is exposed to heat in a heating zone to achieve substantially complete polymerization of the gel coat film and the unsaturated polyester

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syrup of said reinforcing lamination (Column 3, Lines 25-30). While the specific heating/curing means is not disclosed, one of ordinary skill in the art at the time of the invention would have found it obvious to use actinic radiation since the relevant resin formulations have been previously described by Cordts as being uv-curable. In particular, the gel coat has already been partially cured via exposure to ultraviolet radiation. As such, the use of actinic radiation in the heating zone of Cordts to heat/cure the gel coat resin and the resin on the reinforcing lamination would have been well within the purview of one of ordinary skill in the art at the time of the invention.

With respect to claims 13 and 14, Cordts suggests the use of a cover plastic film 31 (same material as casting film) over the reinforcing lamination (Column 3, Lines 20-25).

Regarding claims 15, the cover plastic film 31, which is transparent, is disposed over the reinforcing lamination prior to the heating zone.

With respect to claims 17 and 18, Cordts discloses a method in which a cover plastic film 31' disposed over the gel coat film prior to cure (before heating zone in which complete cure is realized). As to claim 18, although Cordts fails to expressly suggest a take-up reel, one of ordinary skill in the art at the time of the invention would have readily appreciated such a step since it is well known to store laminates in roll form prior to use.

12. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cordts as applied in Paragraphs 7 and 9 above and further in view of Gupta.

Cordts teaches a method of applying a gel coat to a casting plastic film and exposing

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the gel coat to ultraviolet radiation to at least partially cure said gel coat. While Cordts fails to suggest the use of thermal energy to augment this process, the use of dual cure systems are well known and extensively used in a variety of industries depending on the specific product being manufactured (e.g. cost issues, desired efficiency). For example, Gupta, in describing a gel coat that is applied to a mold, states, "some materials can be cured by a combination of heat and ultraviolet light" (Column 6, Lines 49-50). Thus, the use of thermal energy to augment the process of Cordts (use of thermal energy and ultraviolet radiation) would have been obvious to one of ordinary skill in the art at the time of the invention.

13. Claims 1-9, 16-19, and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meoni (US 4,734,143) and further in view of Cordts and Borrel. As best depicted in Figure 1, Figure 1, Meoni teaches a method of forming a composite ribbon comprising the steps of applying a gel coat or polymerization composition (at reference character 5) to a mold or film P1 and exposing said gel coat to actinic radiation (uv radiation and infrared radiation) in a polymerization tunnel 10 (Column 3, Lines 33 – Column 4, Line 8). While Meoni fails to expressly describe the use of radiation sources above and below the gel coat (to impart a bi-directional cure), one of ordinary skill in the art at the time of the invention would have found it obvious to use radiation sources above and below the gel coat of Meoni since such an arrangement is extensively used in a variety of designs, including the application and curing of gel coats, and is recognized as an equivalent to an arrangement in which only a single radiation source (above or below is use). By using multiple radiation sources (above

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and below), one of ordinary skill in the art would expect the curing time to be reduced and the efficiency or evenness of curing to be improved. Cordts (Column 5, Lines 55-62) and Borrel (Figure 1) have been applied as examples that demonstrate the well-known use of multiple radiation sources above and below a given curable composition.

Regarding claims 2 and 28, Meoni states, "the two transparent films P1 and P2 consequently constitute the wall of a polymerization cell or mold" (Column 3, Lines 64-66).

With respect to claims 3 and 29, Meoni teaches the preferred use of polyester films (e.g. polyethyleneterephthalate- Column 3, Lines 54-56).

Regarding claims 4-6, 30, and 31, Meoni describes the use of ultraviolet radiation (Column 4, Lines 3-8). Also, with specific respect to claim 6, although Meoni fails to expressly suggest the use of mercury lamps to provide the uv radiation, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of mercury lamps since they are extensively used for applying uv radiation. It is noted that Borrel describes the use of mercury lamps to provide uv radiation (Column 3, Lines 35-40).

With respect to claims 8, 9, and 32, the gel coat of Meoni is defined as an acrylate resin (Column 2, Lines 39-41).

Regarding claims 16 and 17, Meoni applies a transparent cover plastic film P2 before exposing the gel coat to the first source of actinic radiation.

With respect to claims 18 and 19, the gel coat laminate is coiled or taken-up on a roller 13 for storage, as best depicted in Figure 1.

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Conclusion


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Justin Fischer

August 13, 2003


Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700